CLAIMS

What is claimed is:

1. A valve assembly for reciprocating compressors, comprising:

a cylinder;

a cylinder head; and

a valve assembly arranged between the cylinder and cylinder head, the valve assembly comprising:

an exhaust hole plate having an exhaust hole communicating the cylinder;

a reed valve plate, with a reed valve integrally formed in the reed valve plate so as to open or close the exhaust hole; and

a stopper plate, with a stopper integrally formed in the stopper plate so as to limit an opening ratio of the reed valve within a predetermined range, the exhaust hole plate, the reed valve plate and the stopper plate being assembled with the cylinder together with the cylinder head when the cylinder head is mounted to the cylinder.

2. The valve assembly according to claim 1, further comprising:

a pressure unit integrally formed on a lower surface of the cylinder head so as to compress the stopper to support the stopper, and allow the stopper to apply pre-pressure to the reed valve.

3. The valve assembly according to claim 2, wherein the reed valve is formed by cutting a predetermined portion of the reed valve plate, such that a first end of the reed

valve forms a junction end, and a second end of the reed valve forms a free end.

4. The valve assembly according to claim 3, wherein the stopper is formed by cutting a predetermined portion of the stopper plate, such that a first end of the stopper forms a junction end, and a second end of the stopper forms a free end, the stopper being bent at the junction end thereof at a predetermined angle of inclination, so that the free end of the stopper is raised toward the cylinder head.

5. The valve assembly according to claim 4, wherein the pressure unit comprises:

a first pressure projection projected from the cylinder head at a position corresponding to the junction end of the stopper, thus compressing the junction end of the stopper;

a second pressure projection projected from the cylinder head at a position corresponding to the free end of the stopper, thus compressing the free end of the stopper; and

a third pressure projection projected from the cylinder head at a position corresponding to an intermediate point of the stopper between the junction end and the free end of the stopper, thus compressing the intermediate point of the stopper.

6. The valve assembly according to claim 5, wherein the second pressure projection is slightly longer than the first pressure projection, and the third pressure projection is slightly shorter than the first pressure projection, so that the first, second and third pressure projections support the stopper while shaping the stopper into a bow shape at a position between the cylinder head and the exhaust hole plate, and the free

end of the reed valve is pre-pressurized by the free end of the stopper which is compressed by the second pressure projection.

7. The valve assembly according to claim 6, wherein the third pressure projection is eccentrically positioned between the first and second pressure projections, and the exhaust hole is formed at the exhaust hole plate at a position corresponding to the third pressure projection.

8. The valve assembly according to claim 7, wherein the third pressure projection is positioned to be eccentric toward the second pressure projection.

9. The valve assembly according to claim 7, wherein a depression is formed on a surface of the exhaust hole plate at a position around the exhaust hole, so that the reed valve closes the exhaust hole while a part of the reed valve comes into contact with areas of the exhaust hole plate around the exhaust hole and the depression.